



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,551	11/21/2003	Suresh Balasuramanian	TI-36690	9238

23494 7590 09/20/2005

TEXAS INSTRUMENTS INCORPORATED  
P O BOX 655474, M/S 3999  
DALLAS, TX 75265

EXAMINER

LEE, EUGENE

ART UNIT PAPER NUMBER

2815

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/717,551

Applicant(s)

BALASURAMANIAN ET AL.

Examiner

Eugene Lee

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 June 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) 10-14, 26-30, 43-47 and 50-59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 15-25, 31-42, 48 and 49 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Applicant's election without traverse of Group I, Species I (claims 1-9, 15, 16-25, 31-42, 48, and 49) in the reply filed on 6/30/05 is acknowledged.

Claims 10 thru 14, 26 thru 30, 43 thru 47, and 50 thru 59 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6/30/05.

### *Drawings*

2. FIG. 3, and 5A should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the processing unit (claim 34) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Art Unit: 2815

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In this case, the abstract is less than the minimum length.

Art Unit: 2815

5. The disclosure is objected to because of the following informalities: on page 4, line 8, the word "multiplexer" is misspelled; on page 4, line 14, there is a space missing between "lines" and "101"; and on page 7, line 11, there is a space missing between "for" and "transistors".

Appropriate correction is required.

*Claim Rejections - 35 USC § 103*

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1 thru 9, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of Nomoto et al. 6,891,262 B2. The applicant's admitted prior art discloses (see, for example, FIG. 3) a memory array comprising a first row of transistors 110-1 - 110-16, second row of transistors 110-17 - 110-32, first word line 330, and second word line 340. The Applicant's Admitted Prior Art does not disclose said first word line being laid on top of a layer forming said second word line. However, Nomoto discloses (see, for example, FIG. 1A, and 1B) word lines WL1, and WL2 laid upon each other. In column 28, lines 1-9, Nomoto discloses that the effects of the invention include greatly reducing the distance between word lines of for example semiconductor memory devices to less than the limit of photolithography and as a result slash waste of space. Furthermore, Nomoto discloses that it is possible to greatly reduce the dimensions of the memory cells in the column direction and greatly reduce the bit cost. Therefore, it would have been obvious to one of ordinary skill in the

Art Unit: 2815

art at the time of invention to have said first word line being laid on top of a layer forming said second word line in order to greatly reduce the distance between word lines to less than the limit of photolithography and as a result slash waste of space, hence reducing bit cost.

Regarding claims 2-9, 15, and 16, see, for example, FIG. 3 wherein the Applicant's Admitted Prior Art discloses diffusion layer 360, poly-silicon layer 350, 370, metal1 layer 330, metal2 layer 340, metal3 layer 380, contact layer 390-33, Via1 layer, plurality of metal islands 310-1 – 310-32, and power strap 320.

8. Claims 17 thru 25, 31 thru 42, 48, and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of Nomoto et al. '262 B2 as applied to claims 1-9, 15, and 16 above, and further in view of Tanigawa 5,740,099. Applicant's Admitted Prior Art in view of Nomoto does not disclose a decoder circuit (claim 17) and a processing unit (claim 34). However, Tanigawa discloses (see, for example, Fig. 3) a memory device comprising column address decoder (decoder circuit) 32b, and input/output circuits processing unit) 33a. In column 7, lines 15-17, Tanigawa discloses that the column address decoder selects the memory cell of a memory cell array. In column 7, lines 49-58, Tanigawa discloses that the input-and-output circuits receive the data bit, and supply an output data signal to the external device. The input-and-output circuits transfers the data bit between the external device and a peripheral circuit. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have a decoder circuit and a processing unit in order to select the memory cell of a memory array and then transfer the data bit stored in the memory cell to an external device.

Regarding claims 18-25, 31-33, 35-42, 48, and 49, see, for example, FIG. 3 wherein the Applicant's Admitted Prior Art discloses diffusion layer 360, poly-silicon layer 350, 370, metal1 layer 330, metal2 layer 340, metal3 layer 380, contact layer 390-33, Via1 layer, plurality of metal islands 310-1 – 310-32, and power strap 320.

### **INFORMATION ON HOW TO CONTACT THE USPTO**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Lee whose telephone number is 571-272-1733. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 571-272-1664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eugene Lee  
September 18, 2005

